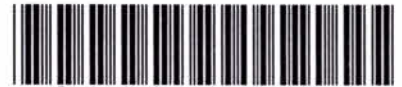


ORIGINAL

OPEN MEETING



0000182454

MEMORANDUM

RECEIVED  
AZ CORP COMMISSION  
DOCKET CONTROL

Arizona Corporation Commission

DOCKETED

2017 SEP -1 A 8:07

TO: THE COMMISSION

FROM: Utilities Division

SEP 01 2017

DATE: September 1, 2017

DOCKETED BY

RE: IN THE MATTER OF THE COMMISSION'S INVESTIGATION INTO IMPROVING THE COMMISSION'S WATER LOSS POLICY FOR THE BETTERMENT OF WATER CONSERVATION (DOCKET NO W-00000A-17-0152)

INTRODUCTION

Enclosed are the Commission Staff's memorandum and proposed order in the matter of the Commission's Investigation into Improving the Commission's Water Loss Policy for the Betterment of Water Conservation (Docket No. W-00000A-17-0152). This is only a Staff recommendation to the Commission; it has not yet become an order of the Commission. The Commission can decide to accept, amend or reject Staff's proposed order.

You may file comments to the recommendation(s) of the proposed order by filing an original and thirteen (13) copies of the comments with the Commission's Docket Control Center at 1200 W. Washington St., Phoenix, AZ 85007 by 4:00 p.m. on or before **September 11, 2017**.

This matter may be scheduled for Commission deliberation at its Open Meetings scheduled **September 12, 2017, at 10:00 a.m.** and **September 13, 2017, at 10:00 a.m.**

If you have any questions about this matter, please contact Briton Baxter of our Staff at (602) 542-7195, or Elijah Abinah, Director, at (602) 542-6935.

BACKGROUND

On May 22, 2017, Commissioner Tobin's Office requested that a docket be opened in the matter of the Commission's Investigation into Improving the Commission's Water Loss Policy for the Betterment of Water Conservation. On June 15, 2017, a workshop was held at the Commission where there were presentations by Staff, the Arizona Department of Water Resources and the Water Infrastructure Financing Authority of Arizona, Jessica Asbill-Case from the U.S. Department of the Interior, Bureau of Reclamation, Kathryn Sorensen from the City of Phoenix Water Service Department, Ray Jones representing the Water Users Association of Arizona ("WUAA"), by Global Water Resources, and by Arizona Water Company.

On June 26, 2017, Commissioner Tobin's Office docketed a list of follow up questions he developed resulting from the first workshop. On July 7, 2017, Staff provided responses to the follow

up questions as did Arizona Water. On July 10, 2017, Global Water Resources provided responses to the follow up questions.

On July 21, 2017, Commissioner Tobin's Office docketed a draft policy statement. On July 28, 2017, a second workshop was held to discuss the draft policy. Attachment 1 is the final policy statement that was developed and that is being put forward for Commission consideration and possible vote.

A handwritten signature in black ink, appearing to read 'E. Abinah', with a stylized flourish at the end.

Elijah O. Abinah  
Director  
Utilities Division

EOA:BAB:vsc\RWG

THE COMMISSION

September 1, 2017

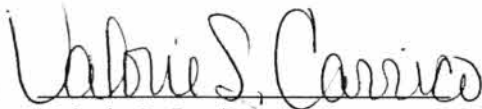
Page 3

On this 1st day of September, 2017, the foregoing document was filed with Docket Control as a **Utilities Division Memorandum & Proposed Order**, and copies of the foregoing were mailed on behalf of the Utilities Division to the following who have not consented to email service. On this date or as soon as possible thereafter, the Commission's eDocket program will automatically email a link to the foregoing to the following who have consented to email service.

Mr. Andy Kvesic  
Director/Chief Counsel, Legal Division  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007

Mr. Elijah O. Abinah  
Director, Utilities Division  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007

By:



Valorie S. Carrico  
Executive Assistant

## Collaborative Commission Approach to Mitigating Water Loss

Policy Statement No. 2 addresses the need for an updated and more collaborative approach to water loss methodology by the Commission. The state of our State did not happen by accident. To transform a desolate desert into a bustling center of commerce and industry required deliberate and methodical planning by Arizona's forebears, especially when it came to water. This responsible planning and management must continue today to secure Arizona's water future for tomorrow. In October 2016, Commissioner Tobin wrote a letter to the Commission calling for an investigation into the matter of water loss.<sup>1</sup> He warned the "cost of keeping the status quo carries a price tag that stretches far beyond the imaginable."<sup>2</sup>

In challenging the status quo, we must be critical and deliberate in our approach to the questions: What is water loss? How should we measure it? How should we report it? Is different treatment of water systems based on size or other variables appropriate? If so, when?

Water loss is a universal problem that affects us all. As such, addressing water loss is not merely a problem of utilities to be regulated, but instead an opportunity for partnership. While the issue of water loss is vast, its mere enormity shouldn't stand in our way of pursuing a manageable framework to systematically address it. These include reforms to calculation methodology and data collection; expanded collaborative efforts between agencies and regulated entities and institutionalizing these gains; promoting conservation and water loss mitigation as cultural aspirations, not just out of regulatory necessity; being wary not to fall into convention, but instead ensuring the continued pursuit of innovation. By exploring these policy areas, we establish a new direction for water loss in Arizona, one that is lasting and open to constant innovation.

This policy statement lays out concrete steps that we can take today to yield meaningful results. The benefits of refining and improving our approach to water loss mitigation include: financial gains for both the ratepayer and company by optimizing revenue recovery and promoting equity among ratepayers; operational stability by minimizing water line breaks and unplanned outages; better management of scarce water resources; the creation of more robust and comparable performance data; and improved system integrity, by reductions of potential source contaminations. These benefits are real and attainable with collaborative efforts and a deliberate approach, from both public and private stakeholders.

The remainder of this document is organized into four sections. The first section addresses updating audit methodology and data collection, ensuring reliable metrics that will lead to fair and effective water loss reduction measures. The second section addresses collaboration between regulatory bodies to memorialize water reform efforts. The third section addresses the culture of conservation the Commission seeks to promote, where regulatory agencies and regulated utilities approach water loss as partners. The final section acknowledges the difficulty in capturing the problem of water loss in one policy statement, and addresses areas where continued research may yield meaningful results. This narrative will be followed by more succinct and formal statements.

---

<sup>1</sup> Correspondence from Commissioner Andy Tobin (October 5, 2016). Arizona Corporation Commission Investigation into Potential Improvements to its Water Policies. Docket No. W-00000C-16-0151.

<sup>2</sup> *Id.* at 4.



## 1    Methodology

2            Establishing the best practice in audit methodology, data collection, and validation is the  
3    obvious first step in approaching water loss. Otherwise, the Commission will not have reliable metrics,  
4    and utilities will not have the reasonable capabilities to effectively meet these standards. That is why  
5    the Commission must seriously consider adopting some or all of the water loss methodologies  
6    contained within the most recent version of the Manual of Water Supply Practices, M36, released by  
7    the American Water Works Association (AWWA). Any meaningful efforts at mitigating water loss  
8    must take full advantage of the M36 as a critical resource. Already, efforts by other state agencies are  
9    underway to explore and apply the methodologies outlined in the M36. The Water Infrastructure  
10   Finance Authority of Arizona (WIFA) has initiated a pilot project to further explore the applicability  
11   of the M36 to Arizona.<sup>3</sup> We must move forward on improving our water loss methodology in two  
12   ways:

### 13    *1) Invest in the WIFA Pilot Project to ensure Commission and small water equities are represented*

14            WIFA, in partnership with Cavanaugh, has committed to a pilot program where six Arizona  
15   water utilities, two of which are regulated by the Commission, will employ and evaluate M36 water  
16   loss methodologies.<sup>4</sup> We strongly support these efforts and direct Staff to provide assistance as  
17   appropriate. We envision greater Staff input and participation with both WIFA and the rural water  
18   community at large. Specifically, Staff should engage and formalize a relationship with WIFA as it  
19   relates to their pilot program.

### 20    *2) Review and recommend appropriate action related to the adoption of part or all of the AWWA M36 Audits and* 21   *Loss Control Program for Commission-regulated utilities*

22            While efforts are underway at WIFA to apply M36 audit methodology through their pilot, it  
23   is appropriate for Staff to review and become familiar with the M36—its strengths, as well as its limits,  
24   as it relates to implementation within Arizona. The M36 states “accountable and efficient management  
25   of water supplies by utilities is the central focus of the water audit methodology and water loss control  
26   programs described in this manual.”<sup>5</sup> It is also important to be aware of the responsibilities of the  
27   Commission when observing “[a]ppropriate caution in target-setting for loss control interventions”.<sup>6</sup>  
28   To this end, any reform the Commission adopts regarding data collection, validation and reporting  
29   methodology must be reflective of the current capabilities and resources of regulated utilities. The  
30   M36 warns against establishing immediate benchmarks for loss reduction where only a limited pool  
31   of well-validated data exists.<sup>7</sup> Instead, the M36 recommends a “focus primarily within the practice of  
32   water auditing for water utilities and thus promote the collection of reliable, comparable utility data.”<sup>8</sup>  
33   This may be the best first step for smaller water companies that may simply lack the technical  
34   sophistication and necessary technology to make immediate loss reduction compliance standards  
35   practicable.

---

<sup>3</sup> Water Infrastructure Finance Authority of Arizona, WIFA, <http://www.azwifa.gov/>.

<sup>4</sup> *Id.*

<sup>5</sup> Kunkel, George A. et al., *Water Audits and Loss Control Programs*, xiii (4th ed. 2016).

<sup>6</sup> *Id.* at 14.

<sup>7</sup> *Id.*

<sup>8</sup> *Id.* at 37.

1 This measured approach reflects the spirit of partnership we are striving to create at the  
2 Commission. Water loss reporting and auditing should be seen as an informative tool for utilities and  
3 ratepayers, not a source of liability for regulatory backlash. Committing to a more robust auditing  
4 regime “is a revealing undertaking that provides great insight to the auditor on” the type and extent  
5 of loss being experienced.<sup>9</sup> Further, “launching a water audit often begins the culture change  
6 necessary” to internalize water-efficiency practices.<sup>10</sup> Small and rural utilities will be best served by  
7 adhering to a ‘top-down’ approach to water system auditing, as opposed to prematurely calling for a  
8 ‘bottom-up’ audit regime. The top-down approach, as envisioned by the M36, is an attractive audit  
9 method for smaller utilities, representing “a relatively quick assembly of available records and data  
10 regarding system parameters, supply, consumption, and loss”.<sup>11</sup> Conversely, the bottom-up approach  
11 calls for the slow and deliberate extraction of data from both the office and the field.<sup>12</sup> Staff, in  
12 reviewing the applicability of the M36 to Arizona, is encouraged to pay special attention to the top-  
13 down audit as described in the manual.<sup>13</sup> Reforming water loss reports would benefit from a review  
14 of the top-down audit, described as “largely a desktop exercise, with minimal field testing or  
15 investigation required”.<sup>14</sup> For example, *Table 3-24* of the M36 provides a number of performance  
16 indicators that can ensure a more robust, yet measured audit.<sup>15</sup> However, as industry has cautioned,  
17 some performance indicators may not be fully validated for small systems. Staff is encouraged to  
18 consider system size, water pressure or other salient factors in reviewing appropriate performance  
19 indicators to include in any data collection and validation efforts.<sup>16</sup>

20 The current water loss calculation used by the Commission is simply the unbilled authorized  
21 consumption added to total revenue water, then divided by net production.<sup>17</sup> Water utilities report this  
22 information, by month, in their Annual Reports. The Commission actively evaluates this information  
23 in three instances: 1) during activity involving review of Certificates of Public Convenience and  
24 Necessity (CC&N) (either at the initial grant of a CC&N or an extension of an existing certificate); 2)  
25 rate case proceedings, or 3) in review of financial proceedings, such as applicability of System  
26 Improvement Funds.<sup>18</sup> When the Commission actively reviews water loss data of a utility, and the loss

---

<sup>9</sup> Kunkel, George A. et al., *Water Audits and Loss Control Programs*, 37 (4th ed. 2016).

<sup>10</sup> *Id.*

<sup>11</sup> *Id.* at 36.

<sup>12</sup> *Id.*

<sup>13</sup> The full section titled “Compiling the Top-Down Water Audit Data” is found on pages 38-110 of the M36 Manual. These step-by-step instructions include important pre-audit parameters, notes the free audit software made available by the AWWA for companies to utilize, and numerates the procedural tasks to completing the top-down audit in full.

<sup>14</sup> Kunkel, George A. et al., *Water Audits and Loss Control Programs*, 100 (4th ed. 2016).

<sup>15</sup> *Id.* at 105.

<sup>16</sup> An admittedly short yet informative chapter at the end of the M36 is dedicated to “Considerations for Small Systems”. Important to note, sound water loss control practices are equally appropriate for all utilities. What varies is only the means of implementation between large and small systems. For example, the Environmental Protection Agency (EPA) has developed a three-tier system for implementation time frames. The size of the utility determines which tier that utility falls under, and thus how long that company has to prepare to comply with any new regulation. *Table 9-1* of the M36 outlines differences between large and small systems. Some of these characteristics include geography, water resource utilized, infrastructure, and financial or managerial capacity. We expect Staff to balance the differing characteristics among companies with the universal need for improving water loss control practices.

<sup>17</sup> See the 2016 annual report template found on the ACC website: Arizona Corporation Commission, Utilities Division: Applications and Forms – *Water and Sewer Utilities, Annual Reports*, <http://azcc.gov/divisions/utilities/water/forms.asp>.

<sup>18</sup> Kris Mayes, *Encouraging Conservation by Arizona's Private Water Companies: A New Era of Regulation by the Arizona Corporation Commission*, 49 Ariz. L. R. 297, 313-14 (2007).

figure is in excess of 15%, the utility is required to do a cost-benefit analysis to see if some form of remedial action is appropriate. While this current calculation methodology can provide some value, as generally high water loss percentages translate to lost revenue and increased expenses, Staff is encouraged to review the M36 for other performance indicators into water loss reporting. Unaccounted-for water loss percentage measurements, although a convenient yardstick, can often be misleading. As Commission Staff noted during the June 15 workshop, Commission and Department of Water Resources (ADWR) water loss reports as a percentage are inconsistent utility-to-utility, even though those utilities are reporting the same information to each agency.<sup>19</sup> We find it appropriate to direct Staff to work proactively with the Arizona Department of Environmental Quality (ADEQ) and ADWR to promulgate consistent water loss methodology and reporting timelines across all agencies.

In sum, the time has come for the Commission to reform its data collection and validation practices and reporting requirements to be reflective of best practices as prescribed by the M36. While WIFA, with the Commission's support, conducts its pilot program, it is also appropriate for Commission Staff to conduct their own review of adopting appropriate M36 methodology. Commission efforts should be informed by performance indicators that prove relevant and reliable for all water systems. They should be reflective of the audit capabilities of the reporting water system, but also challenge smaller systems to reasonably improve their methodologies over time. From this reform, appropriate water and revenue loss reduction targets coupled with fair and effective process-based regulation will follow.

#### **Collaboration and Institutionalization**

A critical element in developing effective and lasting water loss policy is collaboration between the controlling regulatory bodies. As stated in the previous section, any review and reform of data collection, validation and reporting methodologies should be implemented in tandem with ADEQ and ADWR. Currently, utilities must report water loss separately to the Commission and ADWR. These reports can sometimes yield different results.<sup>20</sup> The following recommendations will enhance ongoing efforts.

##### *1) Establish the Water Reform Working Group*

We direct Staff to formalize collaborative efforts by forming the Water Reform Working Group (WRWG). The WRWG should, at the very least, consist of members from Staff, ADEQ, and ADWR. We encourage Staff to explore other entities whose participation would be beneficial. These may include members of the public with expertise on water matters or other ancillary regulatory entities with valuable input. The purpose of the WRWG is to proceed with recommendations for reforming and unifying data collection and validation among relevant governmental entities.

The WRWG will formalize and institutionalize water reform efforts. We appreciate and respect Staff's efforts towards greater collaboration in these areas, and we also recognize that progress should not ebb and flow with personnel changes on both the Commissioner and Staff levels. This

---

<sup>19</sup> Commission Staff Workshop Presentation Materials (June 15, 2017). Arizona Corporation Commission Investigation into Potential Improvements to its Water Policies, Docket No. W-00000C-16-0151.

<sup>20</sup> *Id.*

1 WRWG represents the institutionalization and long-term commitment of the Commission to  
2 addressing water loss.

3 *2) Partner with ADEQ and ADWR to streamline and conform data collection efforts*

4 There should be a centralized portal for the State to collect not only water loss data, but all  
5 relevant water and waste-water utility data currently handled by several agencies. While the concept  
6 may be simple, the work to accomplish this goal requires Herculean resolve now and over the coming  
7 years. The WRWG and initial steps toward data consolidation will move this long-term aspiration  
8 forward.

9 The current discrepancies in data collection and water loss reporting between the Commission  
10 and ADWR, the two water loss reporting agencies, has led to inefficiencies and confusion between  
11 the agencies and utilities. Staff noted that water loss reporting from the same utility can vary greatly  
12 between the Commission and ADWR. In an example, Staff pointed out that one utility reported  
13 53.43% water loss to the Commission, while only 6.3% to ADWR.<sup>21</sup> This sizable difference makes the  
14 consistent development or enforcement of compliance items near impossible. Uniform water loss  
15 reporting is a necessary step towards developing meaningful and fair loss compliance standards.

16 A first step is to synchronize reporting dates. Currently, Commission-regulated utilities are  
17 required to report water loss data to the Commission in their annual report by April 15<sup>th</sup> and, when  
18 located within an Active Management Area (AMA), to ADWR on June 1<sup>st</sup>. This reporting reform  
19 should reduce redundancy and inconsistency in water loss reporting. We are aware of discussions  
20 between Staff and ADWR underway related to data sharing and coordination. These efforts should  
21 continue and be institutionalized through the WRWG and ultimately directed toward the ultimate goal  
22 of centralized reporting for all things water.

23 *3) Partnership with RWIC and the small water industry on technical and financial assistance initiatives*

24 The Rural Water Infrastructure Committee (RWIC) is a federal-state partnership that seeks to  
25 connect rural water providers with financial support from a variety of funding sources.<sup>22</sup> We support  
26 Staff's continued participation in RWIC and encourage Staff to explore further opportunities for  
27 partnership and active engagement and report back on what gains further collaboration with the RWIC  
28 can yield.

29 **Culture of Conservation**

30 Reducing water loss in Arizona should be approached as a partnership between regulatory  
31 agencies and the regulated utilities. Water loss is a problem for Arizonans to tackle together, not an  
32 area where we should seek to ascribe liability and insulate responsibility. Open dialogue, fair practice,  
33 and full representation of equities must be the hallmark of this Commission as it moves forward in  
34 mitigating water loss and promoting conservation.

---

<sup>21</sup> Commission Staff Workshop Presentation Materials (June 15, 2017). Arizona Corporation Commission Investigation into Potential Improvements to its Water Policies, Docket No. W-00000C-16-0151.

<sup>22</sup> Rural Water Infrastructure Committee Website, <http://www.rwic.net/>.



1 As previously mentioned, appropriate audit methodology often “begins the culture change  
2 necessary to focus utility employees on water-efficient practices.”<sup>23</sup> Further, institutionalizing  
3 collaborative efforts at the interagency level can embed channels of dialogue. There is certainly,  
4 however, adequate room for public-private engagement.

5 Staff should explore outreach efforts, especially those geared towards smaller and rural water  
6 systems. For example, the Commission can regularly host on its own or with other agencies a rural  
7 workshop series addressing various issues as they relate to water loss. Workshop curriculum that  
8 includes leak management with training on detecting, locating, and repairing leaks and breaks may  
9 prove beneficial. In 2014, researchers from the Water Research Foundation (WRF) conducted a  
10 project that analyzed pipe location and leak management for small systems.<sup>24</sup> They concluded that the  
11 “financial resources to maintain each mile of main are potentially more of a burden on the smallest  
12 systems.”<sup>25</sup> We have seen this situation play out numerous times in considering rate or financing  
13 applications. We respect the special burdens faced by smaller systems and seek to partner with these  
14 systems to find solutions, understanding both the costs and opportunities.

15 The WRF project relied heavily on workshops to facilitate information sharing and training  
16 for small systems. Researchers invited vendors or utilities to workshops to demonstrate water loss  
17 technology and render technical training as necessary. These third parties even performed field testing  
18 of specific equipment.<sup>26</sup> Staff should identify and recruit third-party vendors and experts from other  
19 agencies or utilities to demonstrate proper audit compliance and advanced leak management  
20 techniques at these aforementioned workshops.

21 As Staff moves forward with its data collection, validation and auditing methodology changes,  
22 staffing and training seminars for water companies, especially for the smaller systems, will be  
23 important. Perhaps equally important is coupling information about new auditing requirements with  
24 financial assistance opportunities to meet these new goals. Staff should be familiar with financial  
25 assistance programs and communicate them regularly.

## 26 **Continued Research**

27 This policy statement is intended to be extensive, not exhaustive. Tackling water loss requires  
28 a constant challenge to convention and openness to innovation. There are a number of areas where  
29 the conversation on water loss can be expanded. Staff is directed to explore further the concepts  
30 presented below and report back to the Commission on their applicability to Arizona.

### 31 *1) Address the Water-Energy Nexus*

32 The Water-Energy Nexus is the term that describes the mutual dependency of these  
33 resources—the production of energy requires large volumes of water and water infrastructure requires  
34 large amounts of energy. Usually, utility commissions focus on efficiencies with electricity generation  
35 to address this issue, yet water utilities have a role to play, too. When more water is pumped to service

---

<sup>23</sup> Kunkel, George A. et al., *Water Audits and Loss Control Programs*, 37 (4th ed. 2016).

<sup>24</sup> Water Research Foundation, *Pipe Location and Leakage Management for Small Water Systems – Web Report #4144*, 1 (2014), <http://www.waterrf.org/Pages/Projects.aspx?PID=4144>.

<sup>25</sup> *Id.*

<sup>26</sup> *Id.* at 13.

1 customers, due to leakage or line breaks, more electricity must be used, which requires even more  
2 water in generating electricity to meet that demand. Thus, the Water-Energy cycle continues. Simply  
3 put, improving water infrastructure and reducing water loss is a matter of water and energy efficiency.

4 In 2011, the California Public Utilities Commission (CPUC) approved Embedded Energy in  
5 Water Pilot Programs.<sup>27</sup> The CPUC “required [electric] utilities to partner with water providers to  
6 implement jointly funded programs designed to conserve water, use less energy-intensive water or  
7 make delivery and treatment systems more efficient,” reducing water used by providers and treatment  
8 agencies.<sup>28</sup> As noted in the Final Report, “considerable energy is required to obtain, treat and distribute  
9 water supplies to end-use customers.”<sup>29</sup>

10 Staff should explore where, if any, have joint programs like the one described above been  
11 implemented or explored in Arizona, and whether there is opportunity to create a new energy  
12 efficiency measure focused on leak detection and mitigation with an emphasis on measuring energy  
13 savings as part of an electric utility’s Demand Side Management (DSM) plan.

14 *2) Survey other state approaches to water loss methodology*

15 According to a March 2017 report prepared by Cavanaugh, only two states (California and  
16 Georgia) currently implement AWWA M36 audit methodologies with Level 1 software validation.<sup>30</sup>  
17 The report also notes three states currently utilize full-scale Water Loss Training and Technical  
18 Assistance Programs.<sup>31</sup> Efforts to reform and improve data collection, validation, audit methodology,  
19 and technical assistance and training should be informed by the works of other states that have already  
20 made strides in these areas. Staff should conduct outreach to other regulatory agencies to survey state  
21 methodologies.

22 *3) Explore more financing opportunities*

23 Mitigating water loss will not be free. One consistent concern raised by industry during the  
24 June workshop was the financial burden any water loss reform would pose to utilities, and for good  
25 reason. Industry concerns are echoed in the M36, which emphasizes that “regulatory agencies should  
26 clearly communicate the availability of, and requirements to receive, financial support for water  
27 auditing or loss control functions or projects undertaken by water utilities.”<sup>32</sup>

28 To this end, the Small Water Ombudsman Office must be fully aware of all financing options,  
29 along with the pros and cons of each option. The Ombudsman Office should consider Staff training  
30 in identifying financial support and providing assistance to utilities seeking aid. Staff should also  
31 consider adding a page to the Commission website that lists and describes all sources of utility  
32 financing. This may include links and contact information to each source. As previously discussed,  
33 workshops and seminars on grant opportunities and financing can also be helpful in improving  
34 saliency of available resources.

---

<sup>27</sup> Embedded Energy in Water Pilot Programs Impact Evaluation: Final Report, ECONorthwest (2009).

<sup>28</sup> *Id.* at abstract.

<sup>29</sup> *Id.* at i.

<sup>30</sup> Tory Wagoner, *State of the States – A Comparison of Approaches to Statewide Water Loss Programs*, Cavanaugh, slide 2 (2017).

<sup>31</sup> *Id.* at slide 3.

<sup>32</sup> Kunkel, George A. et al., *Water Audits and Loss Control Programs*, 15 (4th ed. 2016).

1 For example, during the June workshop the Bureau of Reclamation (BOR) presented a  
2 number of grant programs that would be applicable to small utilities in Arizona. The Small-Scale Water  
3 Efficiency Projects Funding “WaterSMART Grant” supports small-scale water management projects  
4 that have been identified through previous planning efforts.<sup>33</sup> Staff should engage with the BOR and  
5 become familiar with the Request for Proposal (RFP), Request for Application (RFA), and Funding  
6 Opportunity Announcement (FOA) processes to act as a resource for small utilities pursuing these  
7 grants.

8 We have raised the importance of utilities having access to System Improvement Funds (SIFs)  
9 in rate cases for class D and E utilities.<sup>34</sup> As stated in Decision No. 75626, many “small utilities find  
10 themselves in a situation where their actual revenue has been insufficient to cover needed  
11 improvement.”<sup>35</sup> In light of reform to audit methodologies and performance indicators, these SIF  
12 mechanisms will be more important than ever. As discussed in Decision No. 75626, requests for these  
13 surcharges should be considered on a case-by-case basis, and consumer safeguards must be in place.<sup>36</sup>

## 14 **Policy Statement No. 2 Promoting a Collaborative Commission Approach to Mitigating and** 15 **Measuring Water Loss**

### 16 **Methodology**

17 1. The Commission recognizes the importance of developing best practices for data collection,  
18 validation and water loss audit methodology.

19 2. The Commission appreciates the need for agencies and utilities to act as partners in addressing  
20 water loss.

21 3. The Commission recognizes the limited value of the Commission’s current water loss calculation  
22 methodology, and ultimately believes a calculation methodology that incorporates pertinent  
23 components of the M36 methodology as discussed herein to be in the public interest.

24 4. The Commission is aware of the challenges faced by small water systems and sees the need to  
25 reform data collection, validation and audit methodologies to reflect these challenges.

### 26 **Invest in the WIFA Pilot Project to ensure Commission and small water equities are represented**

27 1. The Commission recognizes the efforts of WIFA and Cavanaugh in implementing AWWA  
28 standards through their Pilot Program.

29 2. The Commission believes that cooperation and inter-agency support are critical tools in ensuring  
30 efficient and scalable projects.

31 3. The Commission directs Staff to expand and formalize a cooperative relationship with WIFA on  
32 their Pilot Program and lend expertise and knowledge, as appropriate.

---

<sup>33</sup> Bureau of Reclamation, WaterSMART Grants, <https://www.usbr.gov/watersmart/grants.html>.

<sup>34</sup> Arizona Corporation Commission Investigation into Potential Improvements to its Water Policies, Decision No. 75626 at 5. Docket No. W-00000C-16-0151.

<sup>35</sup> *Id.*

<sup>36</sup> *Id.*

1 Review and recommend appropriate action related to the adoption of part or all of the AWWA M36  
2 Audits and Loss Control Program for Commission-regulated utilities

3 1. The Commission recognizes the AWWA M36 Manual as the national standard for water audits and  
4 loss control programs.

5 2. The Commission recognizes the importance of adopting, to the extent practicable, the best audit  
6 and reporting methods prescribed in the M36 Manual.

7 3. The Commission directs Staff to formally review the M36 Manual, in cooperation with ADWR and  
8 WIFA, to determine appropriate performance indicators to measure and data collection and validation  
9 methodologies to adopt.

10 **Collaboration and Institutionalization**

11 1. The Commission believes a critical element in developing effective and lasting water loss policy is  
12 collaboration among the controlling regulatory bodies.

13 2. The Commission affirms any review and reform of data collection, validation and reporting  
14 methodologies should be implemented in tandem with ADEQ and ADWR.

15 Establish the Water Reform Working Group.

16 1. The Commission reaffirms the importance of institutionalizing collaborative efforts between the  
17 various regulatory agencies.

18 2. The Commission is concerned by inconsistent data collection that currently exist between the  
19 Commission and ADWR, including different reporting dates and the discrepancies in reported water  
20 loss percentages.

21 3. The Commission affirms its vision of centralized and publicly accessible portal of water and waste-  
22 water utility data, supported and administered by the several agencies in tandem. However, the  
23 Commission is aware of the work that must begin today to make this goal attainable in the future.

24 4. The Commission directs Staff to establish the Water Reform Working Group (WRWG) to  
25 institutionalize Commission efforts at conforming data collection and reporting processes. Staff shall  
26 conduct outreach to solicit membership, at the very least, from appropriate staff from ADEQ and  
27 ADWR. Staff shall report back to the Commission on the establishment, roster, and meeting schedule  
28 within 60 days from the effective date of this Order.

29 Partner with ADEQ and ADWR to streamline and conform data collection efforts.

30 1. The Commission is aware that inconsistencies exist in reporting requirements and timing to the  
31 Commission and ADWR on water loss data.

32 2. The Commission believes a uniform data collection methodology is in the best interests of the  
33 regulatory agencies, utilities, and the public.

34 3. The Commission directs Staff to partner with ADEQ and ADWR and explore options for  
35 streamlining and conforming data collection practices. Staff, in partnership with ADWR, should  
36 examine performance indicators found in the M36 Manual to determine the best data collection



1 practice for the agencies. Staff shall report to the Commission as soon as practical after the completion  
2 of the WIFA pilot program on the M-36 Manual on the process of the review and efforts to conform  
3 data collection.

4 Partner with RWIC and the small water industry on technical and financial assistance initiatives.

5 1. The Commission recognizes the work of RWIC to provide financial and technical aid to small and  
6 rural water systems throughout the state.

7 2. The Commission believes further Commission engagement with RWIC will lead to greater  
8 information sharing among state agencies and increased access to financial and technical resources for  
9 utilities.

10 3. The Commission directs Staff to expand upon its current cooperative relationship with RWIC to  
11 further RWIC's stated goal of providing loans, grants, and technical assistance to Arizona's rural  
12 communities.

13 Culture of Conservation

14 1. The Commission believes reducing water loss should be done in partnership with other state  
15 agencies and regulated utilities. Water loss is a problem for Arizonans to tackle together, not an area  
16 where we should seek to ascribe liability and insulate responsibility.

17 2. The Commission believes greater outreach efforts to small and rural water communities is a critical  
18 element in promoting this culture of conservation.

19 3. The Commission directs Staff to explore the feasibility of hosting rural workshops, on its own or  
20 in conjunction with other agencies, to address various issues as they relate to water loss. This  
21 exploration may include, at the very least: workshops to demonstrate proper audit compliance and  
22 advanced leak management techniques and training seminars for smaller water companies on data  
23 collection, validation and auditing methodology reforms.

24 Continued Research

25 1. The Commission recognizes the difficulty in capturing the problem of water loss in one policy  
26 statement. More work is needed in a number of areas where further research may yield meaningful  
27 results.

28 Address the Water-Energy Nexus.

29 1. The Commission is aware of efforts in other states to implement jointly funded programs designed  
30 to conserve water, use less energy-intensive water or make delivery and treatment systems more  
31 efficient.

32 2. The Commission believes mitigation and energy efficiency programs that address water loss warrant  
33 additional review.

34 3. The Commission directs Staff to explore efforts undertaken in other states, such as California, in  
35 embedded energy programs and their applicability to Arizona. This should involve outreach to other  
36 state agencies and to state electric and water/waste-water utilities concerning whether any previous

joint programs like the one described in CPUC's Embedded Energy in Water Pilot Programs have been implemented or considered in Arizona.

Survey other state approaches to water loss methodology.

1. The Commission recognizes efforts made in other states on addressing water loss. The Commission notes the work of other states, especially California, New Mexico, and Georgia, where full-scale Water Loss Training and Technical Assistance Programs are in effect.

2. The Commission directs Commission Staff to engage regulatory agencies from other states, especially those previously mentioned, to survey those states' experiences with implementing water loss controls and how they may apply to Arizona.

Explore more financing opportunities.

1. The Commission is aware mitigating water loss may, in some cases, pose a financial burden to utilities.

2. The Commission acknowledges the importance of communicating the availability of, and requirements to receive, financial support for water auditing loss control functions or projects undertaken by water utilities.

3. The Commission directs the Small Water Ombudsman Office to ensure it is well versed in all financing options along with the pros and cons of each option. The Ombudsman Office shall prepare a report for the Commission on financing options available to utilities, to be shared with the public through the Commission website. This report shall consist of, at the very least, financing institutions, their requirements for receiving aid, and contact information for these institutions.

4. Staff is directed to add, maintain, and regularly update a page on the Commission website that lists sources of financing for utilities. The report prepared by the Ombudsman Office should inform this page.

5. The Commission directs Staff to review the applicability of System Improvement Funds as described in Decision No. 75626 in light of reforms to audit methodologies and reporting requirements.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

**BEFORE THE ARIZONA CORPORATION COMMISSION**

TOM FORESE  
Chairman  
BOB BURNS  
Commissioner  
DOUG LITTLE  
Commissioner  
ANDY TOBIN  
Commissioner  
BOYD DUNN  
Commissioner

IN THE MATTER OF THE COMMISSION'S  
INVESTIGATION INTO IMPROVING  
THE COMMISSION'S WATER LOSS  
POLICY FOR THE BETTERMENT OF  
WATER CONSERVATION

DOCKET NO. W-00000A-17-0152  
DECISION NO. \_\_\_\_\_  
ORDER

Open Meeting  
September 12, 2017 10:00 am  
Phoenix, Arizona

BY THE COMMISSION:

The Commission having given due consideration to these matters and balancing these matters in the public interest, finds and concludes that it is in the public interest to adopt and approve the Statement of Commission Policy in Attachment No. 1 to this order. Attachment No. 1 is the Commission's Policy Statement on the matter of the Commission's Investigation into Improving the Commission's Water Loss Policy for the Betterment of Water Conservation.

We direct Staff to publish notice of this Commission Statement of Policy as appropriate.

ORDER

IT IS THEREFORE ORDERED that the Statement of Policy in Attachment No. 1 to this order, is hereby adopted and approved by the Commission.

IT IS FURTHER ORDERED THAT Commission Staff shall publish notice of this Commission Statement of Policy as appropriate.

IT IS FUTHER ORDERED that this Decision shall become effective immediately.

**BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION**

---

CHAIRMAN FORESE

COMMISSIONER DUNN

---

COMMISSIONER TOBIN

COMMISSIONER LITTLE

COMMISSIONER BURNS

IN WITNESS WHEREOF, I, TED VOGT, Executive Director of the Arizona Corporation Commission, have hereunto, set my hand and caused the official seal of this Commission to be affixed at the Capitol, in the City of Phoenix, this \_\_\_\_\_ day of \_\_\_\_\_, 2017.

---

TED VOGT  
EXECUTIVE DIRECTOR

DISSENT: \_\_\_\_\_

DISSENT: \_\_\_\_\_

EOA: BAB: vsc/RWG



1 Arizona Corporation Commission – Generic Investigation  
2 Docket No. W-00000A-17-0152

3  
4 Mr. Andy Kvesic  
5 Director/General Counsel, Legal Division  
6 Arizona Corporation Commission  
7 1200 West Washington Street  
8 Phoenix, Arizona 85007

9 Mr. Elijah O. Abinah  
10 Director, Utilities Division  
11 Arizona Corporation Commission  
12 1200 West Washington Street  
13 Phoenix, Arizona 85007  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

## Collaborative Commission Approach to Mitigating Water Loss

Policy Statement No. 2 addresses the need for an updated and more collaborative approach to water loss methodology by the Commission. The state of our State did not happen by accident. To transform a desolate desert into a bustling center of commerce and industry required deliberate and methodical planning by Arizona's forebears, especially when it came to water. This responsible planning and management must continue today to secure Arizona's water future for tomorrow. In October 2016, Commissioner Tobin wrote a letter to the Commission calling for an investigation into the matter of water loss.<sup>1</sup> He warned the "cost of keeping the status quo carries a price tag that stretches far beyond the imaginable."<sup>2</sup>

In challenging the status quo, we must be critical and deliberate in our approach to the questions: What is water loss? How should we measure it? How should we report it? Is different treatment of water systems based on size or other variables appropriate? If so, when?

Water loss is a universal problem that affects us all. As such, addressing water loss is not merely a problem of utilities to be regulated, but instead an opportunity for partnership. While the issue of water loss is vast, its mere enormity shouldn't stand in our way of pursuing a manageable framework to systematically address it. These include reforms to calculation methodology and data collection; expanded collaborative efforts between agencies and regulated entities and institutionalizing these gains; promoting conservation and water loss mitigation as cultural aspirations, not just out of regulatory necessity; being wary not to fall into convention, but instead ensuring the continued pursuit of innovation. By exploring these policy areas, we establish a new direction for water loss in Arizona, one that is lasting and open to constant innovation.

This policy statement lays out concrete steps that we can take today to yield meaningful results. The benefits of refining and improving our approach to water loss mitigation include: financial gains for both the ratepayer and company by optimizing revenue recovery and promoting equity among ratepayers; operational stability by minimizing water line breaks and unplanned outages; better management of scarce water resources; the creation of more robust and comparable performance data; and improved system integrity, by reductions of potential source contaminations. These benefits are real and attainable with collaborative efforts and a deliberate approach, from both public and private stakeholders.

The remainder of this document is organized into four sections. The first section addresses updating audit methodology and data collection, ensuring reliable metrics that will lead to fair and effective water loss reduction measures. The second section addresses collaboration between regulatory bodies to memorialize water reform efforts. The third section addresses the culture of conservation the Commission seeks to promote, where regulatory agencies and regulated utilities approach water loss as partners. The final section acknowledges the difficulty in capturing the problem of water loss in one policy statement, and addresses areas where continued research may yield meaningful results. This narrative will be followed by more succinct and formal statements.

---

<sup>1</sup> Correspondence from Commissioner Andy Tobin (October 5, 2016). Arizona Corporation Commission Investigation into Potential Improvements to its Water Policies. Docket No. W-00000C-16-0151.

<sup>2</sup> *Id.* at 4.

## 1    Methodology

2            Establishing the best practice in audit methodology, data collection, and validation is the  
3    obvious first step in approaching water loss. Otherwise, the Commission will not have reliable metrics,  
4    and utilities will not have the reasonable capabilities to effectively meet these standards. That is why  
5    the Commission must seriously consider adopting some or all of the water loss methodologies  
6    contained within the most recent version of the Manual of Water Supply Practices, M36, released by  
7    the American Water Works Association (AWWA). Any meaningful efforts at mitigating water loss  
8    must take full advantage of the M36 as a critical resource. Already, efforts by other state agencies are  
9    underway to explore and apply the methodologies outlined in the M36. The Water Infrastructure  
10   Finance Authority of Arizona (WIFA) has initiated a pilot project to further explore the applicability  
11   of the M36 to Arizona.<sup>3</sup> We must move forward on improving our water loss methodology in two  
12   ways:

### 13    *1) Invest in the WIFA Pilot Project to ensure Commission and small water equities are represented*

14            WIFA, in partnership with Cavanaugh, has committed to a pilot program where six Arizona  
15   water utilities, two of which are regulated by the Commission, will employ and evaluate M36 water  
16   loss methodologies.<sup>4</sup> We strongly support these efforts and direct Staff to provide assistance as  
17   appropriate. We envision greater Staff input and participation with both WIFA and the rural water  
18   community at large. Specifically, Staff should engage and formalize a relationship with WIFA as it  
19   relates to their pilot program.

### 20    *2) Review and recommend appropriate action related to the adoption of part or all of the AWWA M36 Audits and* 21   *Loss Control Program for Commission-regulated utilities*

22            While efforts are underway at WIFA to apply M36 audit methodology through their pilot, it  
23   is appropriate for Staff to review and become familiar with the M36—its strengths, as well as its limits,  
24   as it relates to implementation within Arizona. The M36 states “accountable and efficient management  
25   of water supplies by utilities is the central focus of the water audit methodology and water loss control  
26   programs described in this manual.”<sup>5</sup> It is also important to be aware of the responsibilities of the  
27   Commission when observing “[a]ppropriate caution in target-setting for loss control interventions”.<sup>6</sup>  
28   To this end, any reform the Commission adopts regarding data collection, validation and reporting  
29   methodology must be reflective of the current capabilities and resources of regulated utilities. The  
30   M36 warns against establishing immediate benchmarks for loss reduction where only a limited pool  
31   of well-validated data exists.<sup>7</sup> Instead, the M36 recommends a “focus primarily within the practice of  
32   water auditing for water utilities and thus promote the collection of reliable, comparable utility data.”<sup>8</sup>  
33   This may be the best first step for smaller water companies that may simply lack the technical  
34   sophistication and necessary technology to make immediate loss reduction compliance standards  
35   practicable.

---

<sup>3</sup> Water Infrastructure Finance Authority of Arizona, WIFA, <http://www.azwifa.gov/>.

<sup>4</sup> *Id.*

<sup>5</sup> Kunkel, George A. et al., *Water Audits and Loss Control Programs*, xiii (4th ed. 2016).

<sup>6</sup> *Id.* at 14.

<sup>7</sup> *Id.*

<sup>8</sup> *Id.* at 37.

1 This measured approach reflects the spirit of partnership we are striving to create at the  
2 Commission. Water loss reporting and auditing should be seen as an informative tool for utilities and  
3 ratepayers, not a source of liability for regulatory backlash. Committing to a more robust auditing  
4 regime “is a revealing undertaking that provides great insight to the auditor on” the type and extent  
5 of loss being experienced.<sup>9</sup> Further, “launching a water audit often begins the culture change  
6 necessary” to internalize water-efficiency practices.<sup>10</sup> Small and rural utilities will be best served by  
7 adhering to a ‘top-down’ approach to water system auditing, as opposed to prematurely calling for a  
8 ‘bottom-up’ audit regime. The top-down approach, as envisioned by the M36, is an attractive audit  
9 method for smaller utilities, representing “a relatively quick assembly of available records and data  
10 regarding system parameters, supply, consumption, and loss”.<sup>11</sup> Conversely, the bottom-up approach  
11 calls for the slow and deliberate extraction of data from both the office and the field.<sup>12</sup> Staff, in  
12 reviewing the applicability of the M36 to Arizona, is encouraged to pay special attention to the top-  
13 down audit as described in the manual.<sup>13</sup> Reforming water loss reports would benefit from a review  
14 of the top-down audit, described as “largely a desktop exercise, with minimal field testing or  
15 investigation required”.<sup>14</sup> For example, *Table 3-24* of the M36 provides a number of performance  
16 indicators that can ensure a more robust, yet measured audit.<sup>15</sup> However, as industry has cautioned,  
17 some performance indicators may not be fully validated for small systems. Staff is encouraged to  
18 consider system size, water pressure or other salient factors in reviewing appropriate performance  
19 indicators to include in any data collection and validation efforts.<sup>16</sup>

20 The current water loss calculation used by the Commission is simply the unbilled authorized  
21 consumption added to total revenue water, then divided by net production.<sup>17</sup> Water utilities report this  
22 information, by month, in their Annual Reports. The Commission actively evaluates this information  
23 in three instances: 1) during activity involving review of Certificates of Public Convenience and  
24 Necessity (CC&N) (either at the initial grant of a CC&N or an extension of an existing certificate); 2)  
25 rate case proceedings, or 3) in review of financial proceedings, such as applicability of System  
26 Improvement Funds.<sup>18</sup> When the Commission actively reviews water loss data of a utility, and the loss

---

<sup>9</sup> Kunkel, George A. et al., *Water Audits and Loss Control Programs*, 37 (4th ed. 2016).

<sup>10</sup> *Id.*

<sup>11</sup> *Id.* at 36.

<sup>12</sup> *Id.*

<sup>13</sup> The full section titled “Compiling the Top-Down Water Audit Data” is found on pages 38-110 of the M36 Manual. These step-by-step instructions include important pre-audit parameters, notes the free audit software made available by the AWWA for companies to utilize, and numerates the procedural tasks to completing the top-down audit in full.

<sup>14</sup> Kunkel, George A. et al., *Water Audits and Loss Control Programs*, 100 (4th ed. 2016).

<sup>15</sup> *Id.* at 105.

<sup>16</sup> An admittedly short yet informative chapter at the end of the M36 is dedicated to “Considerations for Small Systems”. Important to note, sound water loss control practices are equally appropriate for all utilities. What varies is only the means of implementation between large and small systems. For example, the Environmental Protection Agency (EPA) has developed a three-tier system for implementation time frames. The size of the utility determines which tier that utility falls under, and thus how long that company has to prepare to comply with any new regulation. *Table 9-1* of the M36 outlines differences between large and small systems. Some of these characteristics include geography, water resource utilized, infrastructure, and financial or managerial capacity. We expect Staff to balance the differing characteristics among companies with the universal need for improving water loss control practices.

<sup>17</sup> See the 2016 annual report template found on the ACC website: Arizona Corporation Commission, Utilities Division: Applications and Forms – *Water and Sewer Utilities, Annual Reports*, <http://azcc.gov/divisions/utilities/water/forms.asp>.

<sup>18</sup> Kris Mayes, *Encouraging Conservation by Arizona's Private Water Companies: A New Era of Regulation by the Arizona Corporation Commission*, 49 Ariz. L. R. 297, 313-14 (2007).



1 figure is in excess of 15%, the utility is required to do a cost-benefit analysis to see if some form of  
2 remedial action is appropriate. While this current calculation methodology can provide some value, as  
3 generally high water loss percentages translate to lost revenue and increased expenses, Staff is  
4 encouraged to review the M36 for other performance indicators into water loss reporting.  
5 Unaccounted-for water loss percentage measurements, although a convenient yardstick, can often be  
6 misleading. As Commission Staff noted during the June 15 workshop, Commission and Department  
7 of Water Resources (ADWR) water loss reports as a percentage are inconsistent utility-to-utility, even  
8 though those utilities are reporting the same information to each agency.<sup>19</sup> We find it appropriate to  
9 direct Staff to work proactively with the Arizona Department of Environmental Quality (ADEQ) and  
10 ADWR to promulgate consistent water loss methodology and reporting timelines across all agencies.

11 In sum, the time has come for the Commission to reform its data collection and validation  
12 practices and reporting requirements to be reflective of best practices as prescribed by the M36. While  
13 WIFA, with the Commission's support, conducts its pilot program, it is also appropriate for  
14 Commission Staff to conduct their own review of adopting appropriate M36 methodology.  
15 Commission efforts should be informed by performance indicators that prove relevant and reliable  
16 for all water systems. They should be reflective of the audit capabilities of the reporting water system,  
17 but also challenge smaller systems to reasonably improve their methodologies over time. From this  
18 reform, appropriate water and revenue loss reduction targets coupled with fair and effective process-  
19 based regulation will follow.

## 20 **Collaboration and Institutionalization**

21 A critical element in developing effective and lasting water loss policy is collaboration between  
22 the controlling regulatory bodies. As stated in the previous section, any review and reform of data  
23 collection, validation and reporting methodologies should be implemented in tandem with ADEQ  
24 and ADWR. Currently, utilities must report water loss separately to the Commission and ADWR.  
25 These reports can sometimes yield different results.<sup>20</sup> The following recommendations will enhance  
26 ongoing efforts.

### 27 *1) Establish the Water Reform Working Group*

28 We direct Staff to formalize collaborative efforts by forming the Water Reform Working  
29 Group (WRWG). The WRWG should, at the very least, consist of members from Staff, ADEQ, and  
30 ADWR. We encourage Staff to explore other entities whose participation would be beneficial. These  
31 may include members of the public with expertise on water matters or other ancillary regulatory  
32 entities with valuable input. The purpose of the WRWG is to proceed with recommendations for  
33 reforming and unifying data collection and validation among relevant governmental entities.

34 The WRWG will formalize and institutionalize water reform efforts. We appreciate and  
35 respect Staff's efforts towards greater collaboration in these areas, and we also recognize that progress  
36 should not ebb and flow with personnel changes on both the Commissioner and Staff levels. This

---

<sup>19</sup> Commission Staff Workshop Presentation Materials (June 15, 2017). Arizona Corporation Commission Investigation into Potential Improvements to its Water Policies, Docket No. W-00000C-16-0151.

<sup>20</sup> *Id.*

WRWG represents the institutionalization and long-term commitment of the Commission to addressing water loss.

*2) Partner with ADEQ and ADWR to streamline and conform data collection efforts*

There should be a centralized portal for the State to collect not only water loss data, but all relevant water and waste-water utility data currently handled by several agencies. While the concept may be simple, the work to accomplish this goal requires Herculean resolve now and over the coming years. The WRWG and initial steps toward data consolidation will move this long-term aspiration forward.

The current discrepancies in data collection and water loss reporting between the Commission and ADWR, the two water loss reporting agencies, has led to inefficiencies and confusion between the agencies and utilities. Staff noted that water loss reporting from the same utility can vary greatly between the Commission and ADWR. In an example, Staff pointed out that one utility reported 53.43% water loss to the Commission, while only 6.3% to ADWR.<sup>21</sup> This sizable difference makes the consistent development or enforcement of compliance items near impossible. Uniform water loss reporting is a necessary step towards developing meaningful and fair loss compliance standards.

A first step is to synchronize reporting dates. Currently, Commission-regulated utilities are required to report water loss data to the Commission in their annual report by April 15<sup>th</sup> and, when located within an Active Management Area (AMA), to ADWR on June 1<sup>st</sup>. This reporting reform should reduce redundancy and inconsistency in water loss reporting. We are aware of discussions between Staff and ADWR underway related to data sharing and coordination. These efforts should continue and be institutionalized through the WRWG and ultimately directed toward the ultimate goal of centralized reporting for all things water.

*3) Partnership with RWIC and the small water industry on technical and financial assistance initiatives*

The Rural Water Infrastructure Committee (RWIC) is a federal-state partnership that seeks to connect rural water providers with financial support from a variety of funding sources.<sup>22</sup> We support Staff's continued participation in RWIC and encourage Staff to explore further opportunities for partnership and active engagement and report back on what gains further collaboration with the RWIC can yield.

**Culture of Conservation**

Reducing water loss in Arizona should be approached as a partnership between regulatory agencies and the regulated utilities. Water loss is a problem for Arizonans to tackle together, not an area where we should seek to ascribe liability and insulate responsibility. Open dialogue, fair practice, and full representation of equities must be the hallmark of this Commission as it moves forward in mitigating water loss and promoting conservation.

---

<sup>21</sup> Commission Staff Workshop Presentation Materials (June 15, 2017). Arizona Corporation Commission Investigation into Potential Improvements to its Water Policies, Docket No. W-00000C-16-0151.

<sup>22</sup> Rural Water Infrastructure Committee Website, <http://www.rwic.net/>.

1 As previously mentioned, appropriate audit methodology often “begins the culture change  
2 necessary to focus utility employees on water-efficient practices.”<sup>23</sup> Further, institutionalizing  
3 collaborative efforts at the interagency level can embed channels of dialogue. There is certainly,  
4 however, adequate room for public-private engagement.

5 Staff should explore outreach efforts, especially those geared towards smaller and rural water  
6 systems. For example, the Commission can regularly host on its own or with other agencies a rural  
7 workshop series addressing various issues as they relate to water loss. Workshop curriculum that  
8 includes leak management with training on detecting, locating, and repairing leaks and breaks may  
9 prove beneficial. In 2014, researchers from the Water Research Foundation (WRF) conducted a  
10 project that analyzed pipe location and leak management for small systems.<sup>24</sup> They concluded that the  
11 “financial resources to maintain each mile of main are potentially more of a burden on the smallest  
12 systems.”<sup>25</sup> We have seen this situation play out numerous times in considering rate or financing  
13 applications. We respect the special burdens faced by smaller systems and seek to partner with these  
14 systems to find solutions, understanding both the costs and opportunities.

15 The WRF project relied heavily on workshops to facilitate information sharing and training  
16 for small systems. Researchers invited vendors or utilities to workshops to demonstrate water loss  
17 technology and render technical training as necessary. These third parties even performed field testing  
18 of specific equipment.<sup>26</sup> Staff should identify and recruit third-party vendors and experts from other  
19 agencies or utilities to demonstrate proper audit compliance and advanced leak management  
20 techniques at these aforementioned workshops.

21 As Staff moves forward with its data collection, validation and auditing methodology changes,  
22 staffing and training seminars for water companies, especially for the smaller systems, will be  
23 important. Perhaps equally important is coupling information about new auditing requirements with  
24 financial assistance opportunities to meet these new goals. Staff should be familiar with financial  
25 assistance programs and communicate them regularly.

## 26 **Continued Research**

27 This policy statement is intended to be extensive, not exhaustive. Tackling water loss requires  
28 a constant challenge to convention and openness to innovation. There are a number of areas where  
29 the conversation on water loss can be expanded. Staff is directed to explore further the concepts  
30 presented below and report back to the Commission on their applicability to Arizona.

### 31 *1) Address the Water-Energy Nexus*

32 The Water-Energy Nexus is the term that describes the mutual dependency of these  
33 resources—the production of energy requires large volumes of water and water infrastructure requires  
34 large amounts of energy. Usually, utility commissions focus on efficiencies with electricity generation  
35 to address this issue, yet water utilities have a role to play, too. When more water is pumped to service

---

<sup>23</sup> Kunkel, George A. et al., *Water Audits and Loss Control Programs*, 37 (4th ed. 2016).

<sup>24</sup> Water Research Foundation, *Pipe Location and Leakage Management for Small Water Systems – Web Report #4144*, 1 (2014), <http://www.waterrf.org/Pages/Projects.aspx?PID=4144>.

<sup>25</sup> *Id.*

<sup>26</sup> *Id.* at 13.

1 customers, due to leakage or line breaks, more electricity must be used, which requires even more  
2 water in generating electricity to meet that demand. Thus, the Water-Energy cycle continues. Simply  
3 put, improving water infrastructure and reducing water loss is a matter of water and energy efficiency.

4 In 2011, the California Public Utilities Commission (CPUC) approved Embedded Energy in  
5 Water Pilot Programs.<sup>27</sup> The CPUC “required [electric] utilities to partner with water providers to  
6 implement jointly funded programs designed to conserve water, use less energy-intensive water or  
7 make delivery and treatment systems more efficient,” reducing water used by providers and treatment  
8 agencies.<sup>28</sup> As noted in the Final Report, “considerable energy is required to obtain, treat and distribute  
9 water supplies to end-use customers.”<sup>29</sup>

10 Staff should explore where, if any, have joint programs like the one described above been  
11 implemented or explored in Arizona, and whether there is opportunity to create a new energy  
12 efficiency measure focused on leak detection and mitigation with an emphasis on measuring energy  
13 savings as part of an electric utility’s Demand Side Management (DSM) plan.

14 *2) Survey other state approaches to water loss methodology*

15 According to a March 2017 report prepared by Cavanaugh, only two states (California and  
16 Georgia) currently implement AWWA M36 audit methodologies with Level 1 software validation.<sup>30</sup>  
17 The report also notes three states currently utilize full-scale Water Loss Training and Technical  
18 Assistance Programs.<sup>31</sup> Efforts to reform and improve data collection, validation, audit methodology,  
19 and technical assistance and training should be informed by the works of other states that have already  
20 made strides in these areas. Staff should conduct outreach to other regulatory agencies to survey state  
21 methodologies.

22 *3) Explore more financing opportunities*

23 Mitigating water loss will not be free. One consistent concern raised by industry during the  
24 June workshop was the financial burden any water loss reform would pose to utilities, and for good  
25 reason. Industry concerns are echoed in the M36, which emphasizes that “regulatory agencies should  
26 clearly communicate the availability of, and requirements to receive, financial support for water  
27 auditing or loss control functions or projects undertaken by water utilities.”<sup>32</sup>

28 To this end, the Small Water Ombudsman Office must be fully aware of all financing options,  
29 along with the pros and cons of each option. The Ombudsman Office should consider Staff training  
30 in identifying financial support and providing assistance to utilities seeking aid. Staff should also  
31 consider adding a page to the Commission website that lists and describes all sources of utility  
32 financing. This may include links and contact information to each source. As previously discussed,  
33 workshops and seminars on grant opportunities and financing can also be helpful in improving  
34 saliency of available resources.

---

<sup>27</sup> Embedded Energy in Water Pilot Programs Impact Evaluation: Final Report, ECONorthwest (2009).

<sup>28</sup> *Id.* at abstract.

<sup>29</sup> *Id.* at i.

<sup>30</sup> Tory Wagoner, *State of the States – A Comparison of Approaches to Statewide Water Loss Programs*, Cavanaugh, slide 2 (2017).

<sup>31</sup> *Id.* at slide 3.

<sup>32</sup> Kunkel, George A. et al., *Water Audits and Loss Control Programs*, 15 (4th ed. 2016).



1 For example, during the June workshop the Bureau of Reclamation (BOR) presented a  
2 number of grant programs that would be applicable to small utilities in Arizona. The Small-Scale Water  
3 Efficiency Projects Funding “WaterSMART Grant” supports small-scale water management projects  
4 that have been identified through previous planning efforts.<sup>33</sup> Staff should engage with the BOR and  
5 become familiar with the Request for Proposal (RFP), Request for Application (RFA), and Funding  
6 Opportunity Announcement (FOA) processes to act as a resource for small utilities pursuing these  
7 grants.

8 We have raised the importance of utilities having access to System Improvement Funds (SIFs)  
9 in rate cases for class D and E utilities.<sup>34</sup> As stated in Decision No. 75626, many “small utilities find  
10 themselves in a situation where their actual revenue has been insufficient to cover needed  
11 improvement.”<sup>35</sup> In light of reform to audit methodologies and performance indicators, these SIF  
12 mechanisms will be more important than ever. As discussed in Decision No. 75626, requests for these  
13 surcharges should be considered on a case-by-case basis, and consumer safeguards must be in place.<sup>36</sup>

## 14 **Policy Statement No. 2 Promoting a Collaborative Commission Approach to Mitigating and** 15 **Measuring Water Loss**

### 16 **Methodology**

17 1. The Commission recognizes the importance of developing best practices for data collection,  
18 validation and water loss audit methodology.

19 2. The Commission appreciates the need for agencies and utilities to act as partners in addressing  
20 water loss.

21 3. The Commission recognizes the limited value of the Commission’s current water loss calculation  
22 methodology, and ultimately believes a calculation methodology that incorporates pertinent  
23 components of the M36 methodology as discussed herein to be in the public interest.

24 4. The Commission is aware of the challenges faced by small water systems and sees the need to  
25 reform data collection, validation and audit methodologies to reflect these challenges.

### 26 **Invest in the WIFA Pilot Project to ensure Commission and small water equities are represented**

27 1. The Commission recognizes the efforts of WIFA and Cavanaugh in implementing AWWA  
28 standards through their Pilot Program.

29 2. The Commission believes that cooperation and inter-agency support are critical tools in ensuring  
30 efficient and scalable projects.

31 3. The Commission directs Staff to expand and formalize a cooperative relationship with WIFA on  
32 their Pilot Program and lend expertise and knowledge, as appropriate.

---

<sup>33</sup> Bureau of Reclamation, WaterSMART Grants, <https://www.usbr.gov/watersmart/grants.html>.

<sup>34</sup> Arizona Corporation Commission Investigation into Potential Improvements to its Water Policies, Decision No. 75626 at 5. Docket No. W-00000C-16-0151.

<sup>35</sup> *Id.*

<sup>36</sup> *Id.*

1 Review and recommend appropriate action related to the adoption of part or all of the AWWA M36  
2 Audits and Loss Control Program for Commission-regulated utilities

3 1. The Commission recognizes the AWWA M36 Manual as the national standard for water audits and  
4 loss control programs.

5 2. The Commission recognizes the importance of adopting, to the extent practicable, the best audit  
6 and reporting methods prescribed in the M36 Manual.

7 3. The Commission directs Staff to formally review the M36 Manual, in cooperation with ADWR and  
8 WIFA, to determine appropriate performance indicators to measure and data collection and validation  
9 methodologies to adopt.

10 **Collaboration and Institutionalization**

11 1. The Commission believes a critical element in developing effective and lasting water loss policy is  
12 collaboration among the controlling regulatory bodies.

13 2. The Commission affirms any review and reform of data collection, validation and reporting  
14 methodologies should be implemented in tandem with ADEQ and ADWR.

15 **Establish the Water Reform Working Group.**

16 1. The Commission reaffirms the importance of institutionalizing collaborative efforts between the  
17 various regulatory agencies.

18 2. The Commission is concerned by inconsistent data collection that currently exist between the  
19 Commission and ADWR, including different reporting dates and the discrepancies in reported water  
20 loss percentages.

21 3. The Commission affirms its vision of centralized and publicly accessible portal of water and waste-  
22 water utility data, supported and administered by the several agencies in tandem. However, the  
23 Commission is aware of the work that must begin today to make this goal attainable in the future.

24 4. The Commission directs Staff to establish the Water Reform Working Group (WRWG) to  
25 institutionalize Commission efforts at conforming data collection and reporting processes. Staff shall  
26 conduct outreach to solicit membership, at the very least, from appropriate staff from ADEQ and  
27 ADWR. Staff shall report back to the Commission on the establishment, roster, and meeting schedule  
28 within 60 days from the effective date of this Order.

29 **Partner with ADEQ and ADWR to streamline and conform data collection efforts.**

30 1. The Commission is aware that inconsistencies exist in reporting requirements and timing to the  
31 Commission and ADWR on water loss data.

32 2. The Commission believes a uniform data collection methodology is in the best interests of the  
33 regulatory agencies, utilities, and the public.

34 3. The Commission directs Staff to partner with ADEQ and ADWR and explore options for  
35 streamlining and conforming data collection practices. Staff, in partnership with ADWR, should  
36 examine performance indicators found in the M36 Manual to determine the best data collection

1 practice for the agencies. Staff shall report to the Commission as soon as practical after the completion  
2 of the WIFA pilot program on the M-36 Manual on the process of the review and efforts to conform  
3 data collection.

4 Partner with RWIC and the small water industry on technical and financial assistance initiatives.

5 1. The Commission recognizes the work of RWIC to provide financial and technical aid to small and  
6 rural water systems throughout the state.

7 2. The Commission believes further Commission engagement with RWIC will lead to greater  
8 information sharing among state agencies and increased access to financial and technical resources for  
9 utilities.

10 3. The Commission directs Staff to expand upon its current cooperative relationship with RWIC to  
11 further RWIC's stated goal of providing loans, grants, and technical assistance to Arizona's rural  
12 communities.

13 Culture of Conservation

14 1. The Commission believes reducing water loss should be done in partnership with other state  
15 agencies and regulated utilities. Water loss is a problem for Arizonans to tackle together, not an area  
16 where we should seek to ascribe liability and insulate responsibility.

17 2. The Commission believes greater outreach efforts to small and rural water communities is a critical  
18 element in promoting this culture of conservation.

19 3. The Commission directs Staff to explore the feasibility of hosting rural workshops, on its own or  
20 in conjunction with other agencies, to address various issues as they relate to water loss. This  
21 exploration may include, at the very least: workshops to demonstrate proper audit compliance and  
22 advanced leak management techniques and training seminars for smaller water companies on data  
23 collection, validation and auditing methodology reforms.

24 Continued Research

25 1. The Commission recognizes the difficulty in capturing the problem of water loss in one policy  
26 statement. More work is needed in a number of areas where further research may yield meaningful  
27 results.

28 Address the Water-Energy Nexus.

29 1. The Commission is aware of efforts in other states to implement jointly funded programs designed  
30 to conserve water, use less energy-intensive water or make delivery and treatment systems more  
31 efficient.

32 2. The Commission believes mitigation and energy efficiency programs that address water loss warrant  
33 additional review.

34 3. The Commission directs Staff to explore efforts undertaken in other states, such as California, in  
35 embedded energy programs and their applicability to Arizona. This should involve outreach to other  
36 state agencies and to state electric and water/waste-water utilities concerning whether any previous

1 joint programs like the one described in CPUC's Embedded Energy in Water Pilot Programs have  
2 been implemented or considered in Arizona.

3 Survey other state approaches to water loss methodology.

4 1. The Commission recognizes efforts made in other states on addressing water loss. The Commission  
5 notes the work of other states, especially California, New Mexico, and Georgia, where full-scale Water  
6 Loss Training and Technical Assistance Programs are in effect.

7 2. The Commission directs Commission Staff to engage regulatory agencies from other states,  
8 especially those previously mentioned, to survey those states' experiences with implementing water  
9 loss controls and how they may apply to Arizona.

10 Explore more financing opportunities.

11 1. The Commission is aware mitigating water loss may, in some cases, pose a financial burden to  
12 utilities.

13 2. The Commission acknowledges the importance of communicating the availability of, and  
14 requirements to receive, financial support for water auditing loss control functions or projects  
15 undertaken by water utilities.

16 3. The Commission directs the Small Water Ombudsman Office to ensure it is well versed in all  
17 financing options along with the pros and cons of each option. The Ombudsman Office shall prepare  
18 a report for the Commission on financing options available to utilities, to be shared with the public  
19 through the Commission website. This report shall consist of, at the very least, financing institutions,  
20 their requirements for receiving aid, and contact information for these institutions.

21 4. Staff is directed to add, maintain, and regularly update a page on the Commission website that lists  
22 sources of financing for utilities. The report prepared by the Ombudsman Office should inform this  
23 page.

24 5. The Commission directs Staff to review the applicability of System Improvement Funds as  
25 described in Decision No. 75626 in light of reforms to audit methodologies and reporting  
26 requirements.